1. **(Amended)** A radio frequency tag, comprising:

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output; and

a comparator having a first comparator input coupled to an antenna to accept a received signal **of less than 500 millivolts** and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to **[compare]** **demodulate** the received signal **based on a comparison of the received signal** to the threshold voltage signal **[and to generate a digital output based on the comparison]**.

2. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the comparator and the threshold voltage generator are powered by only leakage current from the local power supply.

3. The radio frequency tag of claim 1, wherein the comparator and the threshold voltage generator are powered by less than four microamps of current from the local power supply.

4. **(Amended)** **A [The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein a power consumption of the comparator is approximately three microamps.

5. **(Amended)** **A [The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein a power consumption of the threshold voltage generator is less than 1 microamp of current from the local power supply.

6. The radio frequency tag of claim 1, wherein the local power supply is a battery power supply.

7. The radio frequency tag of claim 1, wherein the local power supply is a lithium coin cell battery.

8. The radio frequency tag of claim 1, wherein the radio tag receives communicated signals on a very low frequency (VLF) carrier signal.

9. The radio frequency tag of claim 1, wherein the radio tag receives communicated signals on a low frequency (LF) carrier signal.

10. **(Amended)** **A [The]** radio frequency tag **[of claim 1], comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the comparator has a propagation delay of less than fifteen percent of a period of a carrier signal on which communicated signals are received such that at least seven digital outputs are generated for each period.

11. **(Amended)** **A [The]** radio frequency tag **[of claim 1], comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the comparator has a propagation delay of approximately ten percent of a period of a carrier signal on which communicated signals are received such that at least ten digital outputs are generated for the received signal during each period.

12. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the comparator has a propagation delay of less than one microsecond.

13. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output, the threshold voltage generator comprising:

a first resistor coupled to the local power supply;

a second resistor coupled in series to the first resistor, the second resistor further coupled to a ground; and

the threshold voltage generator output coupled to a connection between the first resistor and the second resistor**; and** **[.]**

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

14. The radio frequency tag of claim 13, further comprising:

a capacitor coupled to the connection between the first resistor and the second resistor, the capacitor further coupled to the ground, the capacitor operable to maintain a substantially constant voltage on the threshold voltage generator output.

15. The radio frequency tag of claim 1, wherein the threshold voltage signal is less than 50 millivolts.

16. The radio frequency tag of claim 1, wherein the threshold voltage signal is less than 500 millivolts.

17. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the radio frequency tag has a range in excess of ten feet.

18. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the radio frequency tag has a range in excess of 25 feet.

19. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the radio frequency tag has a range in excess of 100 feet.

20. **(Amended)** **A** **[The]** radio frequency tag **[of claim 1]**, **comprising:**

a threshold voltage generator coupled to a local power supply and operable to generate a threshold voltage signal on a threshold voltage generator output;

a comparator having a first comparator input coupled to an antenna to accept a received signal and a second comparator input coupled to the threshold voltage generator output to receive the threshold voltage signal, the comparator powered by the local power supply and operable to compare the received signal to the threshold voltage signal and to generate a digital output based on the comparison; and

wherein the radio frequency tag has a range in excess of 150 feet.

21. **(Amended)** A method for demodulating a signal at a radio frequency tag, comprising:

accepting a received signal;

generating a threshold voltage signal less than **[50]** **500** millivolts;

comparing the received signal with the threshold voltage signal; and

generating a digital output based on the comparison of the received signal to the threshold voltage signal.

22. The method of claim 21, further comprising providing a comparator to compare the received signal to the threshold voltage signal.

23. The method of claim 21, wherein the threshold voltage signal is less than 10 millivolts.

24. **(Amended)** **A** **[The]** method **[of claim 21,]** **for demodulating a signal at a radio frequency tag, [further]** comprising:

accepting a received signal;

generating a threshold voltage signal less than 50 millivolts;

comparing the received signal with the threshold voltage signal;

generating a digital output based on the comparison of the received signal to the threshold voltage signal; and

wherein generating the threshold voltage signal and comparing it to the received signal **[using]** **uses** only leakage current from a local power supply.

25. The method of claim 21, further comprising generating the threshold voltage signal and comparing it to the received signal using less than four microamps of current from a local power supply.

Please add the following new Claims 26-29:

-- **26. The radio frequency tag of claim 1, wherein the threshold voltage signal is less than 300 millivolts.**

27. The method of claim 21, wherein the threshold voltage signal is less than 300 millivolts.

28. The method of claim 21, wherein the threshold voltage signal is less than 50 millivolts.

29. The method of Claim 21, further comprising generating the threshold voltage signal and comparing it to the received signal using only leakage current from a local power supply.--